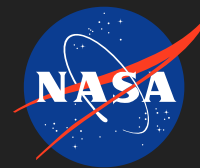


Photon sieve telescope evaluation for use with Lidar systems

Completed Technology Project (2015 - 2016)



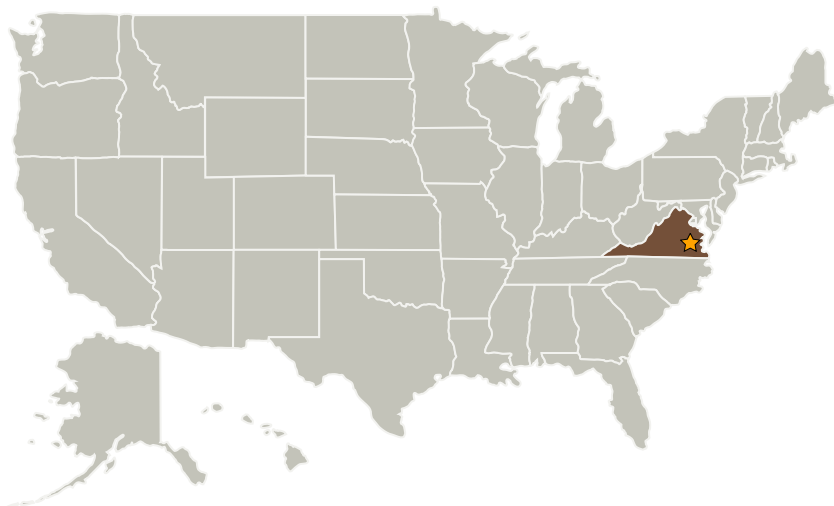
Project Introduction

This project evaluates the use of a photon sieve telescope for remote sensing Lidar systems to reduce the mass, volume and cost associated with traditional Lidar telescopes. By the end of FY16, the project will have designed and manufactured a series of 2-inch photon sieve samples for lab bench testing. Samples would be manufactured using existing equipment at Langley. The bench testing will quantify the efficiency of the sieve and its ability to reduce noise.

Anticipated Benefits

With initial success in FY16, the team will pursue an SMD/ESTO ACT opportunity in January 2017 by proposing to integrate the photon sieve into an aircraft base lidar system. The Earth Science cloud, aerosol, and ocean color science community will benefit by the simplified optics, reduced mass, and filtering of sun light.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Langley Research Center (LaRC)	Lead Organization	NASA Center	Hampton, Virginia



Photon sieve telescope evaluation for use with Lidar systems

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Primary U.S. Work Locations

Virginia

Project Website:

<https://www.nasa.gov/directorates/spacetech/home/index.html>

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Center Innovation Fund: LaRC CIF

Project Management

Program Director:

Michael R Lapointe

Program Manager:

Julie A Williams-byrd

Principal Investigator:

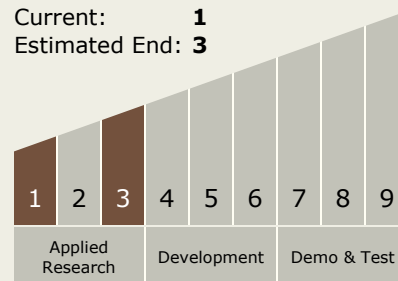
David G Macdonnell

Technology Maturity (TRL)

Start: **1**

Current: **1**

Estimated End: **3**



Photon sieve telescope evaluation for use with Lidar systems

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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.5 Lasers